

I. Allowable Claims

The Examiner is thanked for the indication that claims 3, 21, 22 and 27 contain allowable subject matter. However, for at least the reasons set forth below, Applicants submit that all pending claims are in condition for allowance.

II. Claim Rejection - 35 U.S.C. §103(a)

A. Claims 1 and 2

The Office Action rejects claims 1 and 2 under 35 U.S.C. §103(a) over U.S. Patent No. 5,807,606 to Mould et al. (hereinafter "Mould"), in view of U.S. Patent No. 5,349,256 to Holliday (hereinafter "Holliday"), and further in view of U.S. Patent No. 5,449,961 to Ludwig et al. (hereinafter "Ludwig"), U.S. Patent No. 6,262,503 to Liebman et al. (hereinafter "Liebman"), U.S. Patent No. 4,542,324 to Leuthen (hereinafter "Leuthen"), U.S. Patent No. 6,069,418 to Tanaka (hereinafter "Tanaka"), U.S. Patent No. 6,437,481 to Senda (hereinafter "Senda"), and U.S. Patent No. 5,053,685 to Bacchi (hereinafter "Bacchi"). This rejection is respectfully traversed.

It is respectfully submitted that it is improper to combine the aforementioned references because one of ordinary skill in the art would have had no motivation to make such a combination.

Mould is the primary reference and is directed to applying adhesive to substrates. Mould shows a processor controlled X-Y gantry with an imager for automatically applying an adhesive

to circuit boards. Applicants note that Mould does not disclose or suggest the use of linear motors on the gantry, let alone a system and method for cooling a linear motor. At the time the Mould patent application was filed, it was common for the parts of an X-Y gantry to be moved using typical rotary electric motors and belts, rather than linear motors. Because Mould fails to mention the use of linear motors, there is no reason to believe that Mould even considered the possibility of using linear motors.

Applicants respectfully submit that Holliday is directed to a linear transducer. Figures 3-13 shows various magnetic coil winding geometries and high permeability magnetic paths. The Office Action cites Holliday to indicate that magnets can be thermally demagnetized, thus there is a need to protect magnets from heat. However, Holliday neither discloses nor suggests any type of cooling system or method to be used with the disclosed transducers, let alone a linear motor.

The Office Action also asserts that the Mould and Holliday patent references are both from the same field of endeavor. However, since Mould is directed to a machine and method for applying solder paste to a printed circuit board, and Holliday is in the linear transducer arts, it is respectfully submitted that the two references are not from the same field of endeavor.

In addition, the Office Action asserts that one of ordinary skill in the art viewing Mould and Holliday would have been motivated to add some type of cooling system to the Mould solder adhesive applying gantry based on the teachings in Holliday that it is desirable to cool magnets. It is respectfully submitted that one of ordinary skill in the art viewing these two

references would have not have been so motivated. Because Mould does not disclose the use of linear motors, there is no reason that one of ordinary skill in the art would even believe that a linear motor including magnets would be included in the Mould gantry device. Furthermore, the simple recitation that magnets are sensitive to heat within the Holliday reference does not provide any motivation for adding a cooling system to the Mould gantry. It is respectfully submitted that the combination of Holliday and Mould is only made with improper hindsight in view of Applicants' own invention. For at least this reason, it is respectfully submitted that the asserted combination is improper and that the rejection should be withdrawn.

Ludwig is cited in the Office Action to show that a processor can be used to control the cooling of a dynamo electric machine. Applicants note that Ludwig shows an electricity producing machine in which a rotary generator is rotated by a gas turbine. The generator is cooled by compressed air supplied by the gas turbine.

The Office Action again asserts that Ludwig is from the same field of endeavor as Holliday and Mould. Because Ludwig is from the electric energy producing field, it is respectfully submitted that Ludwig is not from the same field of endeavor as either Holliday or Mould. For at least this reason, it is respectfully submitted that the combination of these three references is improper.

In addition, the Office Action appears to assert that because Ludwig teaches that a processor can be used to control the amount of cooling air supplied to cool an electric generator, one of ordinary skill in the art would have been motivated to use a processor to control a flow

of cooling air supplied to a linear motor. It is respectfully submitted that cooling a linear motor is very different from cooling a rotating electric generator. The rotating electric generator has very compact dimensions, and both the rotating portions and the non-moving portions of the generator are always located in essentially the same positions. In contrast, the moving portion of the linear motor moves up and down a track which comprises the stationary portion. Thus, applying a flow of cooling air to the mover can be quite difficult in the case of a linear motor.

It is respectfully submitted that the cooling system disclosed in Ludwig could not be used with a linear motor. Furthermore, Ludwig does not disclose or suggest how to adapt the processor and temperature sensors of the Ludwig system for use in a linear motor.

For all the above reasons, it is respectfully submitted that one of ordinary skill in the art would have had no motivation to combine aspects of the Ludwig electric producing system with the systems and method disclosed in Mould and Holliday to arrive at a system as claimed. The only motivation for such a combination is the improper use of hindsight in view of Applicants' own invention. For these additional reasons, it is respectfully submitted that the combination of references is improper and that the rejection should be withdrawn.

The remaining references of Liebman, Leuthen, Tanaka, Senda and Bacchi are all cited for showing individual features of the Applicants' invention. However, Applicants respectfully submit that there is no motivation to combine features of these references with the Mould system because none of them are applied to a linear motor of a gantry. Additionally, there is no suggestion in the references to combine their individual features into a single apparatus.

Accordingly, the asserted combination of references is improperly based on hindsight, in view of the Applicants' disclosure. For these additional reasons, it is respectfully submitted that the rejection is improper and should be withdrawn.

Applicants additionally note that even if Mould, Holliday, Ludwig, Liebman, Leuthen, Tanaka, Senda and Bacchi were combined, the combination would fail to disclose or suggest all of the features set forth in claim 1. In particular, the aforementioned references fail to disclose or suggest, either alone or in combination, an encoder periphery sensor attached proximate to the encoder and configured for measuring at least one of a surrounding temperature, humidity and pressure, as set forth in claim 1. Thus, even if the aforementioned combination of eight references was proper, it would nonetheless fail to disclose or suggest all the features set forth in claim 1.

For the reasons discussed above, claim 1 is allowable. Claim 2 is allowable at least for the reasons set forth above with respect to independent claim 1, from which it depends, as well as for its added features. Accordingly, Applicants respectfully request the rejection of claims 1 and 2 be withdrawn.

B. Claim 4

Claim 4 is rejected under 35 U.S.C. §103(a) over Mould, in view of Holliday, and further in view of Ludwig, Leuthen and Tanaka. This rejection is respectfully traversed.

Applicants respectfully submit that for the reasons discussed above with respect to claim 1, the combination of Mould, Holliday, Ludwig, Leuthen and Tanaka is improper because one of ordinary skill in the art would have had no motivation to make such a combination. For at least this reason, Applicants respectfully request that the rejection be withdrawn.

Applicants further submit that even if the combination were proper, it would still fail to disclose or suggest all the features set forth in claim 4. For example, none of the aforementioned references, either alone or in combination, disclose or suggest computing a difference between a pre-set temperature value and measured temperatures if the measured temperatures are greater than the pre-set temperature value, and computing a temperature gain corresponding to the computed temperature difference, as set forth in claim 4. Thus, even the improper combination of Mould, Holliday, Ludwig, Leuthen and Tanaka fails to disclose or suggest all of the features set forth in independent claim 4. Accordingly, for this additional reason, Applicants respectfully request that the rejection of claim 4 be withdrawn.

C. Claims 5 and 6

The Office Action rejects claims 5 and 6 under 35 U.S.C. §103(a) over Mould, in view of Holliday, and further in view of Ludwig, Leuthen, Tanaka and Bacchi. This rejection is respectfully traversed.

It is respectfully submitted that, for the reasons set forth above, one of ordinary skill in the art would have had no motivation to combine any of the features of Mould, Holliday,

Ludwig, Leuthen, Tanaka and Bacchi. Accordingly, such combination is based on improper hindsight gleaned only from the Applicants' disclosure, and the combination is improper. For at least this reason, withdrawal of the rejection of claims 5 and 6 is respectfully requested.

Applicants respectfully submit that even the improper combination of Mould, Holliday, Ludwig, Leuthen, Tanaka and Bacchi fails to disclose or suggest all of the features of independent claim 5. For instance, the asserted references fail to disclose or suggest, either alone or in combination, comparing first temperature values with a pre-set value, computing a temperature difference between the first temperature values and the pre-set value in the case that at least one of the first temperature values is greater than the pre-set value, and computing a temperature gain from the temperature difference, as set forth in independent claim 5. For this additional reason, it is respectfully submitted that claim 5 is in allowable condition. Claim 6 is allowable at least for the reasons set forth above with respect to independent claim 5, from which it depends, as well as for its added features. For these additional reasons, Applicants respectfully request that the rejection of claims 5 and 6 be withdrawn.

D. Claims 7-9, 11, 14, 23 and 24

The Office Action rejects claims 7-9, 11, 14, 23 and 24 under 35 U.S.C. §103(a) over Mould, Ludwig and Holliday. This rejection is respectfully traversed.

Applicants respectfully submit that, for the reasons set forth above, the combination of Mould, Ludwig and Holliday is based on improper hindsight gleaned only from the Applicants' disclosure and is improper. For at least this reason, the rejection should be withdrawn.

Applicants respectfully submit that even if the combination of Mould, Ludwig and Holliday were allowed, it would fail to disclose or suggest all of the features set forth in claim 7. In particular, Applicants note that the references fail to disclose or suggest, either alone or in combination, a cooling system for a gantry having a linear motor and a processor configured to receive a linear motor temperature signal and produce a first control signal in accordance with a difference between a sensed temperature of the linear motor and a prescribed value, as set forth in independent claim 7. Thus, claim 7 is allowable for this additional reason. Claims 8, 9, 11 and 14 are allowable at least for the reasons set forth with respect to independent claim 7, from which they depend, as well as for their added features.

Applicants further note that the combination of Mould, Ludwig and Holliday fail to disclose or suggest, either alone or in combination, comparing the temperature of a linear motor with a predetermined value, as set forth in independent claim 23. Thus, claim 23 is also allowable for this additional reason. Claim 24 is allowable at least for the reasons set forth above with respect to independent claim 23, from which it depends, as well as for its added features.

For all the above reasons, Applicants respectfully request that the rejection of claims 7-9, 11, 14, 23 and 24 be withdrawn.

E. Claims 10, 12 and 13

The Office Action rejects claims 10, 12 and 13 under 35 U.S.C. §103(a) over Mould, Holliday and Ludwig, and further in view of U.S. Patent No. 5,701,044 to Emshoff (hereinafter "Emshoff"). This rejection is respectfully traversed.

For the reasons discussed above, the asserted combination of references is improper. Furthermore, claim 7, from which claims 10, 12 and 13 depend is also allowable over the combination. Accordingly, the rejection of claims 10, 12 and 13 should be withdrawn.

F. Claims 15, 17, 18 and 28

The Office Action rejects claims 15, 17, 18 and 28 under 35 U.S.C. §103(a) over the combination of Mould, Holliday, Ludwig and Leuthen. This rejection is respectfully traversed.

For the reasons discussed above, the combination of references is improper. For at least this reason, the rejection should be withdrawn.

G. Claims 16 and 25

The Office Action rejects claims 16 and 25 under 35 U.S.C. §103(a) over the combination of Mould, Holliday, Ludwig and U.S. Patent No. 4,907,021 to Yabu (hereinafter "Yabu"). This rejection is respectfully traversed.

It is respectfully submitted that, for the reasons discussed above with respect to claim 1, one of ordinary skill in the art would have had no motivation to combine any of the features of

Mould, Holliday and Ludwig. Yabu fails to provide any further motivation to combine Mould, Holliday and Ludwig. Thus, the combination of Mould, Holliday, Ludwig and Yabu is based on improper hindsight gleaned only from the Applicants' disclosure and the combination is improper. Accordingly, claims 16 and 25 are in allowable condition. Applicants respectfully request that the rejection of claims 16 and 25 be withdrawn.

H. Claim 19 and 20

The Office Action rejects claims 19 and 20 under 35 U.S.C. §103(a) over the combination of Mould, Holliday, Luethan, Ludwig and Tanaka. This rejection is respectfully traversed.

It is respectfully submitted that, for the reasons discussed above with respect to independent claim 1, one of ordinary skill in the art would have had no motivation to combine any of the features of Mould, Holliday, Luethen, Ludwig and Tanaka. Accordingly, such combination is based on improper hindsight gleaned only from the Applicants' disclosure and is improper. Accordingly, claims 19 and 20 are in allowable condition. Applicant respectfully requests that the rejection of claims 19 and 20 be withdrawn.

I. Claim 26

The Office Action rejects claim 26 under 35 U.S.C. §103(a) over the combination of Mould, Holliday, Ludwig, Leuthen and Tanaka. This rejection is respectfully traversed.

It is respectfully submitted, that for the reasons discussed above with respect to independent claim 1, one of ordinary skill in the art would have had no motivation to combine

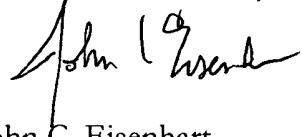
any of the features of Mould, Holliday, Ludwig, Leuthen and Tanaka. Thus, such combination is based on improper hindsight gleaned only from the Applicants' disclosure and is improper. Accordingly, claim 26 is in allowable condition, and Applicants respectfully request that the rejection be withdrawn.

III. Conclusion

In view of the foregoing amendments and remarks, it is respectfully submitted that the application is in condition for allowance. If the Examiner believes that any additional changes would place the application in better condition for allowance, the Examiner is invited to contact the undersigned attorney, Randall H. Cherry, at the telephone number listed below.

To the extent necessary, a petition for an extension of time under 37 C.F.R. 1.136 is hereby made. Please charge any shortage in fees due in connection with the filing of this, concurrent and future replies, including extension of time fees, to Deposit Account 16-0607 and please credit any excess fees to such deposit account.

Respectfully submitted,
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